## Index of Claims

| pplication No. |  |
|----------------|--|
| 0/040 000      |  |

| Applicant(s) |  |
|--------------|--|
|              |  |

SPRANGLE ET AL.

10/040,223 Examiner Kenneth S KIM

2111

| 4 | Rejected |  |
|---|----------|--|
| _ | Allowed  |  |

| - | (Through numeral)<br>Cancelled |
|---|--------------------------------|
| ÷ | Restricted                     |

| N | Non-Elected  |
|---|--------------|
| 1 | Interference |

| A | Appeal   |
|---|----------|
| 0 | Objected |

|       |          |               |         |            |          |          |               |               |          |          |          |          |               |        | _      | $\overline{}$ |               |         |     |          |            |               |           |          |          |          |               |          |              |   |
|-------|----------|---------------|---------|------------|----------|----------|---------------|---------------|----------|----------|----------|----------|---------------|--------|--------|---------------|---------------|---------|-----|----------|------------|---------------|-----------|----------|----------|----------|---------------|----------|--------------|---|
| Cla   | aim      |               |         |            | Dat      | е        |               |               |          | Cla      | aim      |          |               |        | Dat    | e             |               |         | ]   | Cla      | aim        |               |           | _        | C        | ate      |               |          |              | _ |
| Final | Original | 12/8/04       |         |            |          |          |               |               |          | Final    | Original |          |               |        |        |               |               |         |     | Final    | Original   |               |           |          |          |          |               |          |              |   |
|       | 1        | 0             | $\neg$  | $\vdash$   | Т        |          | М             | $\neg$        | _        |          | 51       | $\Box$   | $\neg$        | $\neg$ | $\top$ | $\overline{}$ | $\neg$        |         | 1   |          | 101        |               | 7         | 7        | 7        | 7        | 7             | _        | 7            | _ |
|       | 2        | 2             | 丁       | Т          | Т        |          | П             | $\neg$        | _        |          | 52       | П        | $\neg$        | $\top$ | $\top$ |               | $\top$        | $\top$  | 1   |          | 102        |               |           | $\neg$   | $\neg$   | $\neg$   | $\neg$        |          | 7            | _ |
|       | 3        | E.            | 十       | Т          | Т        |          |               |               | _        |          | 53       |          |               |        |        |               |               | $\top$  | 1   |          | 103        |               |           | 7        |          | _        | ╅             | $\neg$   | $\neg$       | _ |
|       | 4        | П             | $\neg$  | Г          | _        |          | П             |               | _        |          | 54       |          |               |        | $\top$ |               | $\neg$        |         | 1   |          | 104        |               |           | 7        | $\neg$   | $\neg$   | $\neg$        | T        | ╅            | _ |
|       | 5        | 1             | $\neg$  |            |          |          |               |               |          |          | 55       |          |               |        |        |               |               |         | ]   |          | 105        |               |           |          |          | П        | $\neg$        |          | T            | _ |
|       | 6        |               | 工       |            | L        |          |               |               |          |          | 56       |          |               |        |        |               |               |         | ]   |          | 106        |               |           |          |          |          | $\Box$        |          | $\exists$    | _ |
|       | 7        | Ш             |         | L          | L        |          |               |               | _        |          | 57       |          |               |        |        |               |               |         | ]   |          | 107        |               |           |          |          |          |               |          |              |   |
|       | 8        | ш             | _       | _          | _        | $\perp$  | Ш             | _             | _        |          | 58       | 1        | _             | _      | _      | Ш             | _             | $\perp$ | 1   |          | 108        |               | _         | _        | _        | _        | _             | _        | _            |   |
|       | 9        | 44            |         | ┞-         | ┞-       |          | Ш             | _             | _        | _        | 59       | $\vdash$ | 4             | _      | _      |               | $\perp$       |         | 4   |          | 109        |               | _         | 4        | _        | _        | _             |          | 4            |   |
|       | 10       | 11            | -       | ┼-         | ⊢        | Н        | ш             | -             | _        | -        | 60       | Н        | -             | _      | 1      | Ш             | _             | -       | 4   |          | 110        | _             | _         | _        | _        | -        | 4             | _        | 4            | _ |
|       | 11       | ш             | +       | ⊢          | -        | $\vdash$ | Н             | -             |          | -        | 61<br>62 | $\vdash$ | $\rightarrow$ | +      | +      | -             | -             | +       | 4   | _        | 111<br>112 |               | -         | -        | $\dashv$ | -        | -             | -        | 4            | _ |
|       | 13       | Н             | +       | ╀          | -        |          | Н             | $\dashv$      | -        | -        | 63       | $\vdash$ | -             | +      | +      | $\vdash$      | $\vdash$      | +       | 4   |          | 113        | -             | -         | +        | $\dashv$ | +        | -             | -        | +            | _ |
|       | 14       | Н             | +       | $\vdash$   | ⊢        | $\vdash$ | Н             | -             | -        | $\vdash$ | 64       | $\vdash$ | +             | +      | +      | Н             | $\vdash$      | -+-     | 1   | -        | 114        | $\vdash$      | $\dashv$  | $\dashv$ | $\dashv$ | +        | $\dashv$      | +        | +            | _ |
|       | 15       | ++            |         | ╁          | +        |          | Н             | -             | $\dashv$ | $\vdash$ | 65       | Н        | -+            | +      | +      | Н             | $\vdash$      | +       | ┨   | $\vdash$ | 115        | $\vdash$      | +         | +        | $\dashv$ | +        | +             | +        | +            | _ |
| _     | 16       | ++            | +       | +-         | +        |          | $\vdash$      | $\rightarrow$ | $\dashv$ | -        | 66       | $\vdash$ | $\dashv$      | +      | +-     | Н             | $\rightarrow$ | +       | 1   | _        | 116        | $\rightarrow$ | $\dashv$  | +        | $\dashv$ | $\dashv$ | $\dashv$      | $\dashv$ | +            | - |
|       | 17       | ++            | +       | 1          | H        | -        | $\vdash$      | -             | _        |          | 67       | 1        | $^{+}$        | $\pm$  | +      | $\vdash$      | +             | +       | 1   | _        | 117        |               | _         | $\dashv$ | $\dashv$ | $\dashv$ | $\dashv$      | $\dashv$ | +            | - |
|       | 18       | Ġ             | +       | 1          | 1        |          |               | -             | _        |          | 68       | Н        | $\neg$        | - -    | +-     | Н             | +             |         | 1   | _        | 118        | $\neg$        | _         | -        | $\dashv$ | $\dashv$ | 7             | $\dashv$ | +            | _ |
|       | 19       | ~             | $\top$  | Т          | T        |          | П             | _             | _        |          | 69       | 1        | 十             | -      | +      |               | $\neg$        | 1       | 1   |          | 119        |               | _         | $\neg$   | $\dashv$ | $\dashv$ | _             | _        | $^{\dagger}$ | _ |
|       | 20       | í,            | $\neg$  | ⇈          | Г        | 1        |               |               | $\neg$   |          | 70       | $\vdash$ | $\neg$        | _      | +-     |               |               | _       | 1   |          | 120        | $\neg$        | $\neg$    | 7        | _        | _        | 7             | $\neg$   | _            | _ |
|       | 21       | П             | $\top$  | T          | Г        |          |               |               |          |          | 71       | $\Box$   | $\neg$        | $\neg$ | 1      |               | $\neg$        | $\top$  | 1   |          | 121        |               |           | $\neg$   |          | $\neg$   | $\neg$        | $\neg$   | $\neg$       | _ |
|       | 22       | $\mathbf{I}$  |         | L          |          |          |               | $\neg$        |          |          | 72       |          |               |        | Т      |               |               |         | ]   |          | 122        |               |           | T        |          | $\neg$   |               | $\neg$   | Т            |   |
|       | 23       | Ш             |         | L          | L        | П        |               |               |          |          | 73       |          |               |        |        |               |               |         | ]   |          | 123        |               |           | $\Box$   |          | $\Box$   | $\Box$        | $\Box$   | $\Box$       | _ |
|       | 24       | 1             | $\perp$ | L          | _        | ш        |               | _             |          |          | 74       |          |               |        |        | $\Box$        |               | 丄       | 1   |          | 124        |               |           |          | $\Box$   | $\Box$   | $\Box$        | $\perp$  | $\perp$      |   |
|       | 25       | 7             | $\perp$ | <b> </b> _ | L        | Ш        |               |               |          |          | 75       |          | _             | _      |        | Ш             | $\perp$       |         | 1   |          | 125        |               | _         | _        | _        | 4        | _             | _        | 4            | _ |
|       | 26       | $\perp$       |         | L          | _        | ш        |               | _             | _        |          | 76       | Ш        | _             | _      | _      | Ш             |               | _       | 1   |          | 126        |               | _         | 4        | _        | _        | _             | _        | _            |   |
|       | 27       | -             |         | _          | ┡        | $\perp$  | $\perp$       | 4             | 4        | -        | 77       | ш        | $\rightarrow$ | +      | _      | Ш             | $\rightarrow$ |         | 1   |          | 127        |               | _         | 4        | _        | _        | _             | _        | 4            |   |
|       | 28<br>29 | $\dashv$      | +       | -          | ⊢        | Н        | $\dashv$      | -             | _        | -        | 78       | Н        | -             | -      | +      | ш             | $\rightarrow$ | +       | 4   | $\vdash$ | 128        | -             |           | _        | _        | -        | -             | _        | 4            | _ |
|       | 30       | +             | -       | ⊢          | -        | Н        | $\vdash$      | -             | -        | _        | 79       | Н        | $\rightarrow$ | -      | +      | Н             | +             | +       | 4   | $\vdash$ | 129        | $\vdash$      | -         | +        | -        | -        | -             | -        | 4            | _ |
|       | 31       | +             | -       | -          | ⊢        | Н        | Н             | +             | -        |          | 80       | Н        | -             | -      | +-     | Н             | +             | +       | -   | _        | 130<br>131 | $\dashv$      | -         | +        | -        | -        | $\rightarrow$ | +        | +            | _ |
|       | 32       | -             | +       | ⊢          | ┢        | Н        | $\vdash$      | -             | $\dashv$ | -        | 82       | $\vdash$ | -+            | -      | ┿      | Н             | +             | +       | -   | $\vdash$ | 132        | $\dashv$      | -         | +        | -        | -+       | +             | +        | +            | _ |
|       | 33       | +             | +-      | ⊢          | ┢        | Н        | $\vdash$      | -+            | $\dashv$ | -        | 83       | $\vdash$ | +             | +      | +      | Н             | -             | +-      | 1   | -        | 133        | -             | $\dashv$  | -+       | -        | +        | -             | +        | +            | _ |
| _     | 34       | $\rightarrow$ | +       | -          | +        | Н        | $\rightarrow$ | -+            | -        | -        | 84       | $\vdash$ | +             | +      | +      | Н             | $\dashv$      |         | 1   | H        | 134        | $\dashv$      | $\dashv$  | +        | $\dashv$ | +        | +             | +        | +            | _ |
|       | 35       | $\neg$        |         | -          | -        | Н        | $\vdash$      | $\neg$        | _        | -        | 85       | $\vdash$ | $\neg$        | _      | +-     | Н             | $^{+}$        | +-      | 1   | -        | 135        |               | -         | +        | -        | $\dashv$ | +             | +        | +            | - |
|       | 36       | $\neg$        | -       | _          | T        | $\vdash$ | $\vdash$      | $\neg$        | _        |          | 86       | $\vdash$ | $\neg$        | _      | +      | Н             | $^{+}$        | _       | 1   | $\vdash$ | 136        |               | $\neg$    | $\dashv$ | 7        | +        | +             | +        | _            | _ |
|       | 37       | $\neg$        | +       |            |          |          |               | _             | _        |          | 87       | $\Box$   | $\neg$        | $\top$ | +      |               | $\neg$        | _       | 1   | $\vdash$ | 137        |               | $\neg$    | $\dashv$ | 7        | -        | $\neg$        | $^{+}$   | _            | _ |
|       | 38       |               |         |            |          |          | 30            |               |          |          | 88       |          |               |        |        |               | 7             |         | 1   |          | 138        |               |           | 1        | 1        | 1        | 7             |          |              | _ |
|       | 39       |               |         |            | Г        |          |               | $\exists$     |          |          | 89       |          |               |        |        |               | $\neg$        |         | 1   |          | 139        |               | $\neg$    | _        |          | $\dashv$ | _             | 寸        | 1            | _ |
|       | 40       |               |         |            |          |          |               | 1             |          |          | 90       |          |               |        |        |               |               |         | 1   |          | 140        |               | $\exists$ |          |          | ⇉        | T             | T        | T            | _ |
|       | 41       |               | ┰       | ┖          | 匚        |          |               |               | _        |          | 91       |          |               |        |        |               | $\perp$       |         |     |          | 141        |               |           |          |          |          |               |          |              | Ξ |
|       | 42       | _[            | 1       | ┖          | ┕        | Ш        | ⅃             |               | _        |          | 92       |          | 1             | I      |        |               | $\Box$        |         | М   |          | 142        | ⅃             | I         | I        |          | I        | I             | I        | I            |   |
|       | 43       | _             | _       | L          | <u> </u> | Ш        | Ц             | _             | 40       |          | 93       | $\sqcup$ | 4             |        | +      | Ш             |               |         | 1-1 | $\Box$   | 143        | ╝             |           | _        |          | ┚        | _[            |          | 4            | _ |
|       | 44       | $\rightarrow$ | +       | ┞          | ⊢        | Ш        | Ц             | _             | -        | $\vdash$ | 94       | ш        | 4             | _      | 4      | Ш             | _             | $\perp$ | 111 | $\Box$   | 144        | 4             | _         | _        | _[       | _        | 4             | 1        | 4            | _ |
|       | 45       | $\rightarrow$ | +       | ⊢          | ⊢        | Ш        | Ц             | _             | _[]      | $\vdash$ | 95       | $\vdash$ | +             | +      | +      | Н             | $\rightarrow$ | +       | U   | $\vdash$ | 145        | 4             | 4         | _        | _        | _        | 4             | 1        | 4            |   |
|       | 46       | $\rightarrow$ | +       | -          | ⊢        | $\vdash$ | Н             | _             | $\perp$  | $\vdash$ | 96       | $\vdash$ | +             | _      | +      | Н             | $\rightarrow$ | +       | 1   | Ш        | 146        | 4             | -         | -        | _        | _        | -             | -        | +            |   |
|       | 47       | $\rightarrow$ | +       | -          | $\vdash$ | $\vdash$ | $\dashv$      | -             | $\dashv$ | $\vdash$ | 97       | $\vdash$ | +             | +      | +      | Н             | $\rightarrow$ | +       | 4   | ш        | 147        | 4             | 4         | _        | _        | _        | 4             | 4        | $\perp$      |   |
|       | 48       | $\rightarrow$ | +       |            | ⊢        | $\vdash$ | $\dashv$      | -             | -        | $\vdash$ | 98<br>99 | $\vdash$ | +             | +      | +-     | Н             | $\rightarrow$ | +       | 1   | Н        | 148        | -             | -         | -        | 4        | -        | -             | 4        | 4            |   |
|       | 49<br>50 | +             | +       | ⊢          | ⊢        | $\vdash$ | $\vdash$      | $\rightarrow$ | $\dashv$ | $\vdash$ | 100      | $\vdash$ | +             | +      | +      | Н             | +             | +       | 1   | $\vdash$ | 149<br>150 | -             | $\dashv$  | -        | _        | _        | -             | +        | +            |   |